

Abstract below for submission to [28<sup>th</sup> annual Louisiana Remote Sensing and GIS Workshop](#) to be held in Baton Rouge Louisiana on April 24-26, 2012:

An effort to map and monitor baldcypress forest areas in coastal Louisiana, using Landsat, MODIS, and ASTER satellite data

J. Spruce, S. Sader, J. Smoot

This presentation discusses a collaborative project to develop, test, and demonstrate baldcypress forest mapping and monitoring products for aiding forest conservation and restoration in coastal Louisiana. Low lying coastal forests in the region are being negatively impacted by multiple factors, including subsidence, salt water intrusion, sea level rise, persistent flooding, hydrologic modification, annual insect-induced forest defoliation, timber harvesting, and conversion to urban land uses. Coastal baldcypress forests provide invaluable ecological services in terms of wildlife habitat, forest products, storm buffers, and water quality benefits. Before this project, current maps of baldcypress forest concentrations and change did not exist or were out of date. In response, this project was initiated to produce: 1) current maps showing the extent and location of baldcypress dominated forests; and 2) wetland forest change maps showing temporary and persistent disturbance and loss since the early 1970s. Project products are being developed collaboratively with multiple state and federal agencies. Products are being validated using available reference data from aerial, satellite, and field survey data. Results include Landsat TM-based classifications of baldcypress in terms of cover type and percent canopy cover. Landsat MSS data was employed to compute a circa 1972 classification of swamp and bottomland hardwood forest types. Landsat data for 1972-2010 was used to compute wetland forest change products. MODIS-based change products were applied to view and assess insect-induced swamp forest defoliation. MODIS, Landsat, and ASTER satellite data products were used to help assess hurricane and flood impacts to coastal wetland forests in the region.